Michael Neal
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Post Falls, ID 83854

MICHAEL NEAL CONSULTING LLC

William Jerome Ruth

v.

Beartooth Electric Cooperative, Inc., and Asplundh Tree Expert, LLC

Report prepared for

Carlson, Calladine & Peterson LLP

August 29, 2023

Prepared by Michael Neal

Michael Neal Consulting LLC

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I. Scope of Work

I have been engaged by the Carlson, Calladine & Peterson LLP in the matter of William Jerome Ruth V. Beartooth Electric Cooperative, Inc., and Asplundh Tree Expert, LLC to opine on Louis L'amour/ Clark Fire. I was asked to offer opinions about whether a Narrowleaf Cottonwood (Populus angustifolia) contacted Beartooth Electric's 7.2kV distribution line and started the Louis L'amour/ Clark Fire.

This report and all opinions expressed herein are based on my experience in the field of arboriculture, including electric vegetation management, my education and training, my review of documents, photos, and exhibits. This includes my inspection of the Narrowleaf Cottonwood (subject tree) branches at Kilgore Engineering office in Englewood Colorado. I confirm the facts stated in my report are true to the best of my knowledge and belief, and the opinions that I have expressed represent my true and complete professional opinion on this case at this time.

II. Professional Credentials

I have served for over 38 years as an electric utility vegetation management program assessor/analyst, developer, administrator, consultant, and practitioner. Currently, I am the President, of Michael Neal Consulting LLC. Prior to this, I developed, implemented, and administered a successful utility vegetation management program as the Manager/System Forester/Arborist at Arizona Public Service Company for 20 years. Among many expert services, I provide program assessment and best management practices recommendations, workforce training and education, and expert witness services for and relative to electric

utility vegetation management programs. I have provided, and in many cases continue to provide, these services to clients throughout the United States and Canada.

I am an International Society of Arboriculture (ISA) Certified Arborist with a Utility Specialist credential WE-00050AU. I have served as contributor to the ANSI A-300 Standard part 7, Integrated Vegetation Management and the ISA's following BMPs Integrated Vegetation Management 2007, Utility Pruning of Trees 2004, and Tree Risk Assessment and Abatement for Fire Prone States and Provinces in the Western Region of North America. I am a facilitator for the University of Wisconsin, Stevens Point on training utility arborists in vegetation management. I received a Bachelor of Science degree from West Virginia University in Forestry.

III. Summary of Opinions

Based on my experience in the field of arboriculture, including electric vegetation management, my education and training, my review of documents, photos, and exhibits. This includes my inspection of the Narrowleaf Cottonwood, Populus angustifolia (subject tree) branches at Kilgore Engineering office in Englewood, Colorado. There are no conclusive facts the subject tree started Louis L'amour/ Clark Fire.

1. The E-11 branch has been dead for at least two to three years and the attached branch had fractured. There is evidence of sooty canker, saprophytic fungus, and wood borer insect on this branch.
2. The was no evidence of any branch attachment or burnt remnants between E-1 and E-11 at or near the west side of the subject tree.
3. There were no ignition sites located within 143 feet of the tree.
4. The E-1 branch was located 55.9 feet east of the subject tree. If the E-1 branch was located on the west side of the subject tree, it would have to travel through the tree without hitting any other

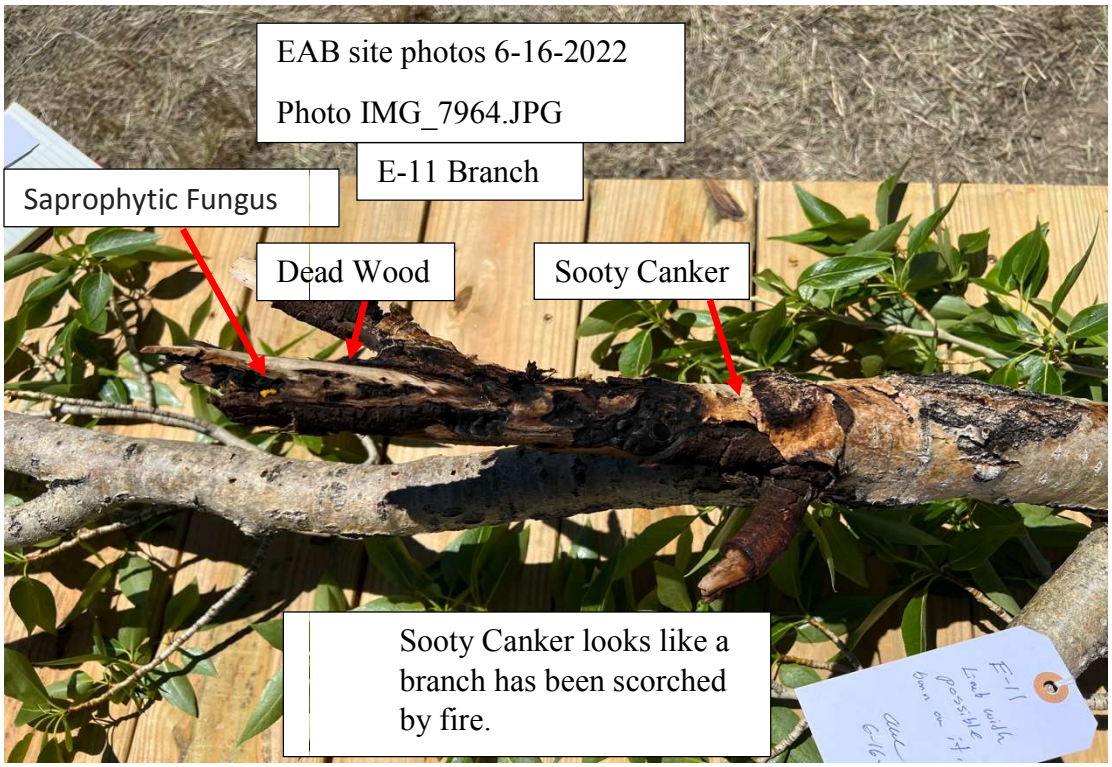
branches or the trunk of the tree. There was no evidence of any fire ignitions at the E-1 landing site. As a matter of fact, there was no vegetation where the branch landed.

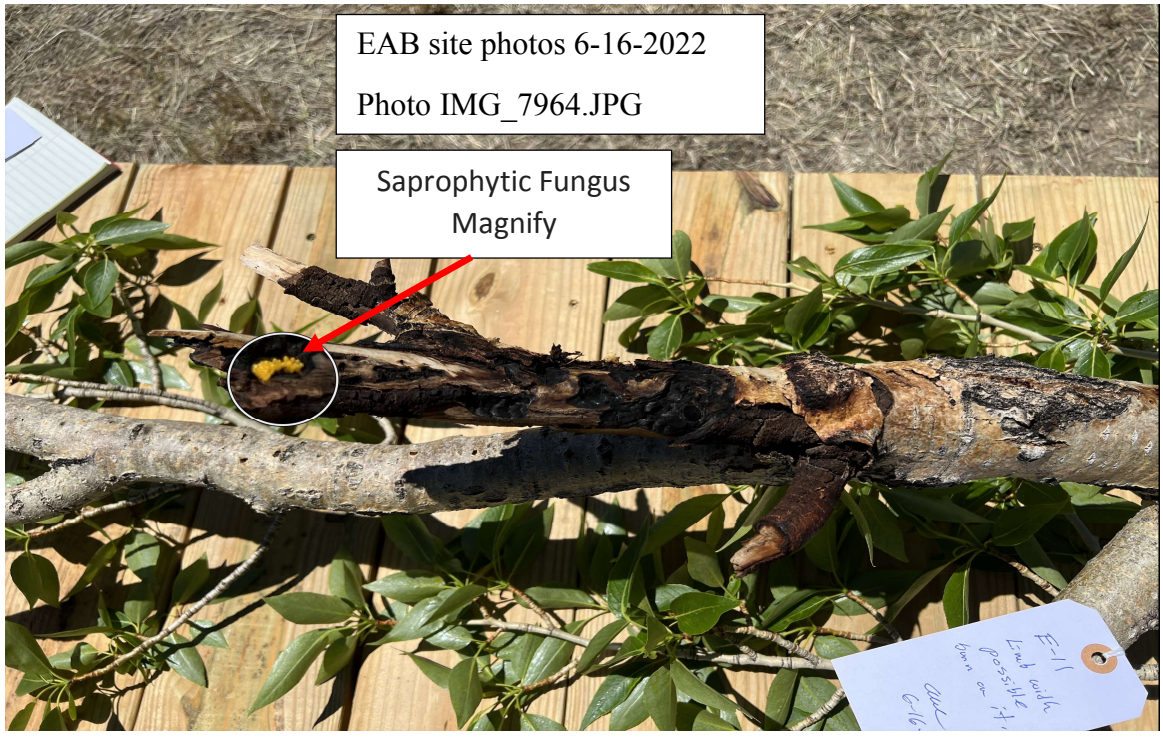
5. The E-9 branch would have contacted the powerline during a strong gale (Force 9) to hurricane force (Force12)[1] wind event. However, this contact would have been intermediate between the conductor and branches as they sway back and forth. There is limited charring or burnt ends on some of the branches of E-9 which wouldn't have created enough energy to send ambers 143 feet and remain charged to start a fire.
6. The North America Electric Reliability Corporation (NERC) Standard FAC-003 pertaining to vegetation in North America high-voltage grid acknowledges line strikes due to winds greater than moderate gale (Force 7) are beyond the control of a transmission owner. As such, fresh gale, strong gale, storm, violent storm, and hurricane winds are considered force majeure/ Act of God conditions that are, by definition, unavoidable.[2] Under these conditions it would apply to distribution systems too.

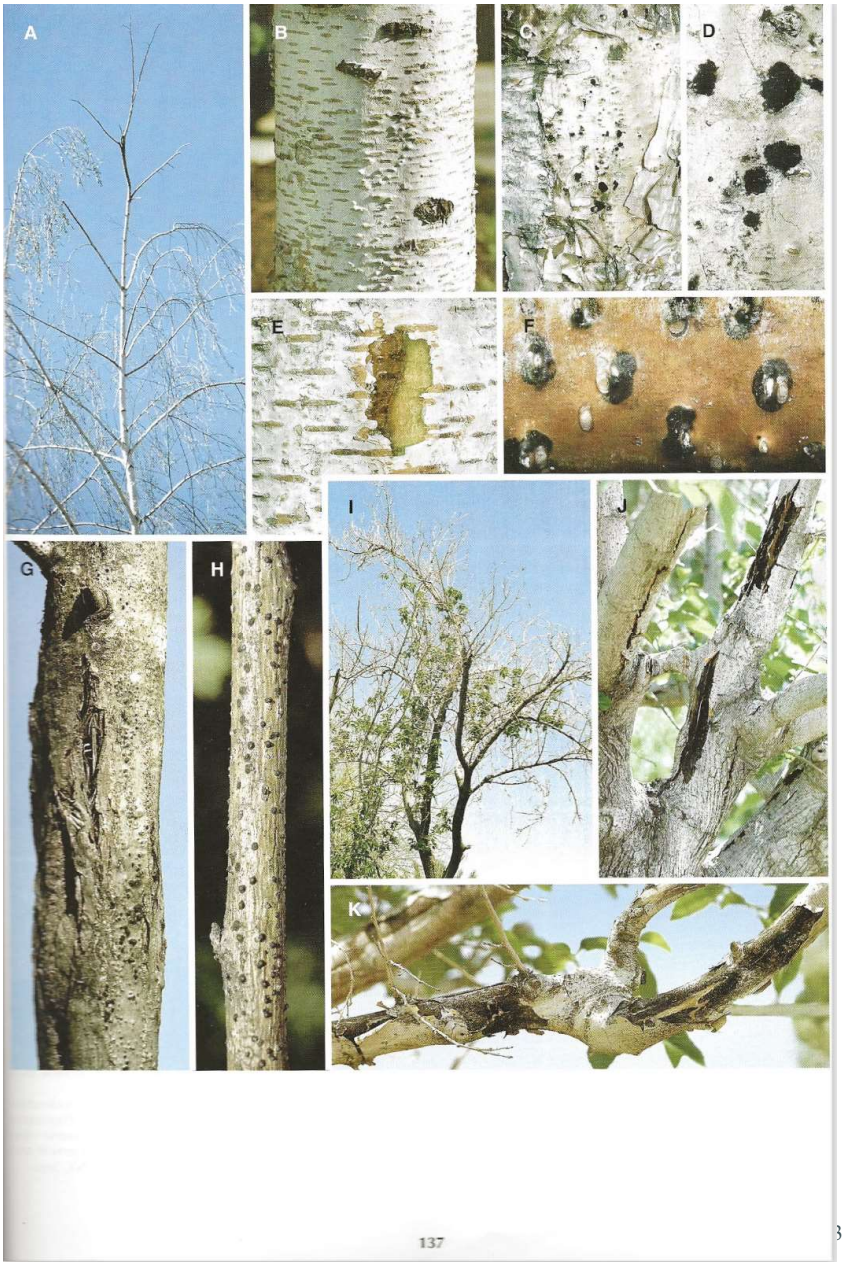
[1] Utility Tree Risk Assessment, Best Management Practices, Goodfellow, John W., page 84, Beaufort Wind Scale Table 4.
[2] Utility Tree Risk Assessment, Best Management Practices, Goodfellow, John W., page 83 and 84.

IV. Factual Background

1. E-11 Branch Sprophytic fungus only dead and dying wood.







Images I-K are sooty canker which is the same in Photo IMG_7964.JPG

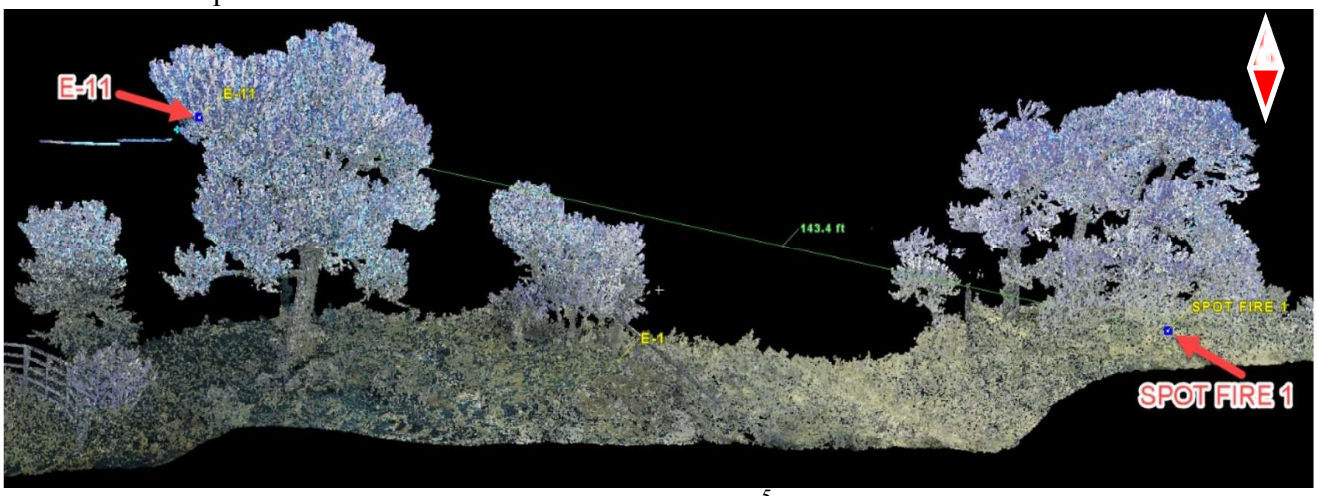
[3] Disease of Trees and Shrubs Section Edition, Sinclair Wayne A. and Lyon Howard H., page 137


KDM 0110 - Item 11,01 Single Shot.jpg
Open with Preview
Lens: E20:X50
Insect Damage
0.025in

2.

EAB Photo 12-1-2021 IMG_5001.JPG No evidence of burnt branches or vegetation.

3. E-11 branch to spot fire 143.4 feet[4]



4. The E-1 branch was found 55.7 feet from the E-11 branch.[5]

Approximate location of E-1 branch. No evidence of combustion of ground vegetation.

[4] 57003 – Clark Fire: Additional Measurements, prepared by Tittle, Eric, page 3
[5] 57003 – Clark Fire: Additional Measurements, prepared by Tittle, Eric, page 5

5. The approximate wind speeds at origin site were 54 mph sustained and gusts to 85 mph.[6]

Beaufort Scale Rating	Wind Speed mph	Wind Speed km/h	Wind Pressure lb/ft²	Wind Pressure kg/m²	Implications for Trees	Consequences; Damages and Outages
Force 0, Calm	< 1	< 2	< 0.003	< 0.015	Leaves stationary.	None
Force 1, Light Air	1–3	2–5	0.01	0.05	Leaves stationary.	None
Force 2, Light Breeze	4–7	6–11	0.08	0.39	Leaves rustle.	None
Force 3, Gentle Breeze	8–12	12–19	0.26	1.27	Leaves and small twigs constantly moving.	None
Force 4, Moderate Breeze	13–18	20–29	0.63	3.08	Small branches begin to move.	Insignificant
Force 5, Fresh Breeze	19–24	30–39	1.2	5.9	Moderate-size branches begin to move. Small trees in leaf begin to sway. Few tree and branch failures.	Minor tree-conductor contact, interruptions begin to increase. Restoration completed as needed.
Force 6, Strong Breeze	25–31	40–50	2.1	10.3	Large branches in motion. Failures of structurally compromised branches. Compromised trees begin to fail.	Scattered outages begin to occur, requiring relatively short restoration times
Force 7, Moderate Gale	32–38	51–61	3.2	15.6	Whole trees in motion, failures of structurally compromised branches. Compromised trees begin to fail.	Scattered outages begin to occur, requiring relatively short restoration times.
Force 8, Fresh Gale	39–46	62–74	4.8	23.4	Small branches broken from trees. Failure of branches and trees increases.	Moderate damage to T&D infrastructure. Outage restoration times of a day or more.
Force 9, Strong Gale	47–54	75–87	6.7	32.7	Widespread failure of medium branches. Whole tree failures, some trees blow over.	Significant damage to T&D infrastructure. Outage restoration times of a day or more.
Force 10, Storm	55–63	88–101	9.2	44.9	Widespread failure of medium and large branches. Trees are broken off or uprooted.	Heavy tree-caused damage to T&D infrastructure. Outage restoration times of multiple days.
Force 11, Violent Storm	64–72	102–116	12.0	58.6	Extensive tree damage; broken limbs blown beyond fall zone. Many trees are broken off or uprooted.	Major tree-caused damage to T&D infrastructure. Outage restoration times of several days.

[6] Clark Wildland Fire Weather Review Report, by Werth Paul, 11-3-22, page 14

V. Conclusion

It is my opinion based on my inspections and analysis of the facts there is no empirical observations, data, or documents that the subject tree caused the Louis L'amour/ Clark Fire.

Signed on August 29, 2023